Electronic Version
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Claims

[c1] An apparatus for forming an alignment layer on a substrate of a liquid crystal display, comprising:ion source for generating ion beams; and mask having a slit and provided between the substrate and the ion source,said ion source has a plate-like object with a plurality of ion ejection holes of various sizes.

[c2] The apparatus according to claim 1, wherein the size of said ion ejection hole varies depending on the ion density.

[c3] The apparatus according to claim 2, wherein, in said plate-like object, ejection holes in a higher ion density portion are smaller in size than those in a lower ion density portion.

[c4] The apparatus according to any one of claims 1 to 3, wherein said plate-like object has an area with ejection holes of different sizes and an area with ejection holes of uniform size.

[c5] The apparatus according to claim 4, wherein said areas are arranged in parallel with said slit.

[c6] The apparatus according to claim 5, further comprising a stage for moving said substrate, wherein said area with ejection holes of different sizes is provided on a rear side relative to the moving direction of the substrate.

[c7] An apparatus for forming an alignment layer on a substrate of a liquid crystal display, comprising:ion source for generating ion beams; andmask having a slit and provided between the substrate and the ion source,said ion source has a plate-like object with different numbers of ion ejection holes per unit area.

[c8] The apparatus according to claim 7, wherein the number of said ion ejection holes varies depending on the ion density.

[c9] The apparatus according to claim 8, wherein, in said plate-like object, a high ion density portion has less number of ejection holes per unit area than a low ion density portion.

[c10] The apparatus according to any one of claims 1 to 3, wherein said plate-like object has an area having different numbers of ejection holes per unit area and an area having the same number of ejection holes per unit area.

[c11] The apparatus according to claim 10, wherein said areas are arranged in parallel with said slit.

[c12] The apparatus according to claim 11, further comprising a stage for moving said substrate, wherein said area with ejection holes of different sizes is provided on a rear side relative to the moving direction of the substrate.

[c13] A method for forming an alignment layer on a substrate of a liquid crystal display, comprising the steps of: ion beams at an ion source; the intensity of the ion beams depending on the ion density of the ion source; and said ion beams to a thin film on the substrate.

[c14] The method according to claim 13, wherein said step of changing the intensity of the ion beams includes making the intensity of the ion beams uniform by changing both the size and density of the ejection holes.